

## Digestibility and Nutritional Value of Gedi (*Abelmoschus manihot* (L.) Leaves Meal in the Diet of Broilers

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**ABSTRACT:** A study was carried out to determine the nutrient utilization and nutrient value of gedi (*Abelmoschus manihot* (L.) Medik) leaves meal, a native plant that abundant in the Northern Sulawesi of Indonesia, when substituted at various levels in the diets. Sixteen adult broiler Cobb-CP 707 35 days of age were conducted in metabolic cages and allocated in four groups of four birds each to determine AME and AMEn, crude protein and crude fibre digestibility. The treatments were corresponded to four dietary treatments containing respectively 0, 5, 10, and 15% gedi leaves meal. Birds were weighed at the beginning and at the end, collected fresh excreta were collected daily and the droppings were oven-dried at 55 °C and ground per bird for three days. Experimental diets and collected excreta were subjected to chemical analysis. The results showed that gedi (*Abelmoschus manihot* (L.) Medik) leaves were relatively rich in crude protein (20.18%), crude fiber (17.53), calcium (3.29%), lysine NDF (20.76%) and positively have steroid and flavonoid. The inclusion of gedi leaves in the diet highly significant ( $P < 0.01$ ) decreased AME and AMEn and significantly ( $P < 0.05$ ) decreased crude protein and crude fiber digestibility. Gedi leaves in diets improved the metabolizable energy utilization in birds fed the 5% level and improved crude protein and crude fiber utilization in birds fed 10% level inclusion diet. Gedi was rich in mucilage, a soluble-polysaccharide, that affected to rate of passage of digesta. It can be concluded that gedi leaves meal can be fed to broiler chickens at up to 10%, and results suggested that the inclusion of gedi leaves to broiler diets may benefit after processing the mucilage.

**Keywords:** gedi, broilers, digestibility, nutritional value

### INTRODUCTION

Poultry rations usually contain antibiotic growth promoters (AGP) to enhance performance of birds. However, the use of antibiotics as a growth promoter in chicken has been reported to cause some unwanted results (Botsoglou and Fletouris, 2001). Poultry nutritionists now are challenged to develop an alternative for AGP. Considerable attention has been paid to medicinal herbs as replacements for AGP (Ibrahim *et al.*, 2005). As an alternative to AGP, medicinal plants are the most popular options (Durrani *et al.*, 2008; Ocak *et al.*, 2008). That phyto-genic feed additives have attracted as alternative feeding strategy to replace AGP (Salary *et al.*, 2014).

Gedi (*Abelmoschus manihot* (L.) Medik) has beneficial effects in medicine. Gedi is a plant that abundant in the Northern-Sulawesi of Indonesia, has been consumed as a medicinal product in Asian countries, South and Southeast Asia, Pacific Island, tropical Africa, and Central America (Preston, 1998). It showed anti-inflammatory and antibacterial (Jain dan Bari, 2011 1 and 2), analgesic effect (Jain dan Bari, 2011 1 and 2), anticonvulsant and anti depressant (Guo, *et al.*, 2011), anti-inflammatory and anti-diabetes (Sarwar *et al.*, 2011). Gedi contains mucilage (gum) that rich in polysaccharides and protein. Han *et al.* (2005) reported that polysaccharides of mucilage of the root of gedi consist of rhamnosa, galacturonate, glucuronat acid, glucose, arabynose, dan galactose.